ABSTRACT OF THE DISCLOSURE

[0090]   A method for obtaining an assist torque to be applied to a human joint, in a human assist system in order to reduce the load on muscles, according to the present invention comprises the step of obtaining a moment due to gravity, acting on a joint of each human segment, based on equations of force and moment balance on each segment. The method further comprises the step of obtaining an assist torque to be applied to the joint to compensate for the moment due to gravity, acting on the joint. In one embodiment of the present invention, various criteria are used such a mechanical energy, metabolic energy and/or a stability/equilibrium factor. In addition, the present invention can account for the situation when there is substantially no relative motion between segments of a given joint and thus, where the mechanical energy component of gravity compensation is approximately zero.